**UNITED STATES DISTRICT COURT**
**EASTERN DISTRICT OF MICHIGAN**
**SOUTHERN DIVISION**

*In re* Flint Water Cases.
(Consolidated)

Civil No. 16-cv-10444

Judith E. Levy
United States District Judge

_____/

This Order Relates to:

Meeks, *et al*. v. United States,
Case No. 19-13359

## STIPULATED ORDER REGARDING HOME INSPECTION PROTOCOL

The *Meeks* Plaintiffs and Defendant, the United States of America, have met and conferred and reached agreement regarding the lead sampling and assessment protocol that shall apply to the *Meeks, et al. v. United States* bellwether trials. The parties, hereby jointly submit the following home inspection protocol in accordance with the directives outlined during the February 13, 2025, Status Conference before the Honorable Judge Levy:

### Stipulated Protocol for Lead Sampling and Assessment in Homes and Soils

This protocol will apply to inspection and testing of property owned or occupied by Bellwether Plaintiffs alleged to have been exposed to Flint River water distributed by the City of Flint's public water utility (individually, a "Subject Property" and collectively, the "Subject Properties"). To begin the process, the United States will select for inspection and testing the Subject Properties it believes are relevant to the Plaintiffs' alleged lead exposure. Upon completion of the selection of the Subject Properties, the United States will submit to the Court a declaration showing which homes it seeks to inspect and an expert's justification for doing so.[1] The Court will then determine which homes may be inspected.

[1] Plaintiffs reserve the right to respond to the United States' submission and declaration.

After the Court determines which Subject Properties may be inspected, and no less than seven (7) days in advance of a desired inspection of a Subject Property identified as currently owned, possessed, or occupied by a specific Bellwether Plaintiff (or other clients that Plaintiffs' counsel represent in another capacity in this litigation), counsel for the United States shall serve counsel for the Bellwether Plaintiffs with a Notice of Intent to Inspect which states the name of the Bellwether Plaintiff, the property address, the date, time and anticipated duration of the inspection activities, the number of and names of the study investigators who will participate in the inspection. The Notice shall provide three proposed dates for the inspection so that Plaintiffs may coordinate logistics.

The parties will cooperate in scheduling inspections pursuant to this protocol. To the extent Court approved homes are owned or occupied by Bellwether Plaintiffs (or other clients Plaintiffs' counsel represents in another capacity in this litigation), Plaintiffs' Counsel will endeavor to obtain the permission of those individuals and shall facilitate entry into the Subject Property in accordance with the Notice and shall make reasonable efforts to ensure that the inspection can be accomplished as described in the Notice within reasonable time. In the event that a Subject Property is not currently owned, possessed, or occupied by a Bellwether Plaintiff (or other clients that Plaintiffs' counsel represent in another capacity in this litigation), the United States shall issue and serve a subpoena for entry into, and inspection of, a Subject Property through the usual procedures of this Court and pursuant to the Federal Rules of Civil Procedure.

To the extent any occupants of the property being inspected choose to remain on their property during the inspection, those occupants will be provided by study investigators personal protection equipment (PPE) substantially similar to that used by study investigators for purposes of COVID protection during the course of the inspection of Plaintiff's property. Any occupant remaining on their property agrees to wear a mask, to observe social distancing, and to cooperate with the efforts of study investigators to maintain appropriate social distancing throughout the course of the inspection. Study investigators will mask and observe social distancing throughout the duration on Plaintiff's property.

In addition, it is understood and agreed that:

1. Both parties will have a right to have legal and/or consultant (i.e., expert/inspector/technician) representation during each inspection.
2. All results of any samples taken by the United States will be shared with Plaintiffs.
3. Disclosure of testing protocols will be shared with Plaintiffs' attorneys and the resident prior to the inspection.

4. The sampling consultants will use their best efforts to prevent property damage during the inspection. The United States shall ensure that the home inspection contractor is insured for any claims of injury on, or damage to, Plaintiff's property.

**The X-Ray Fluorescence (XRF) Sampling Method**

The x-ray fluorescence (XRF) sampling and analytical method will be used to quantify lead levels in interior and exterior painted surfaces, and exterior soils. XRF sampling of water service lines and potable water fixtures may also be conducted, depending on accessibility. An individual XRF measurement is a scan that requires only a few seconds. Portable XRF analyzers are the most common primary analytical method for assessing the presence of LBP due to their high speed and low cost per sample, their demonstrated abilities to determine if LBP is present (even if the LBP has been over-painted several times), and because they measure lead levels without destructive sampling or paint removal. Portable XRF instruments expose the media sample to x-rays, or gamma radiation, which causes lead to emit x-rays with a characteristic frequency or energy. The intensity of this radiation, which is proportional to lead concentration in the substrate, is measured by the instrument. LBP concentrations are reported as both mg/cm2 and ppm; soil concentrations are reported in ppm, and lead concentrations in piping are reported as %.

The consultants and investigators will wear radiation dosimeters to measure their radiation exposure, although exposures are generally extremely low if the XRF instruments are used in accordance with the manufacturer's instructions. If feasible, persons should not be near the other side of a wall, floor, ceiling, or other surface being tested. The shutter of an XRF should never be pointed at anyone, even if the shutter is closed. It is important to note that the XRF method cannot be used to quantify lead in house dust samples (due to insufficient sample size). As described below, if house dust samples are collected, they will be analyzed by a certified laboratory.

**Sampling Consultants and Study Investigators**

The study investigators will be selected by representatives of the United States Department of Justice (DOJ). The study investigators will have prior experience with surveys of lead-containing media at residential locations. Lead-certified inspectors (outside the Flint city limits) that are certified by the State of Michigan for lead-XRF investigations of LBP, soils and indoor plumbing (the "sampling consultants") will be selected by DOJ. The selected firm will also have experience collecting house dust and paint chip samples. The study investigators will review and approve the standard operating procedures (SOPs), and field survey forms used by the sampling consultants. SOPs will include XRF-instrument calibration, sampling technique, and results documentation (sample ID, time and location of sample collection, measured lead value, chain of custody forms, etc.). Sampling consultants will also be responsible for all health and safety issues

associated with LBP home investigations including the use of the XRF instrument. Homes selected for sampling, sample locations at those homes, and number of samples collected per residence will be at the discretion of the study investigators.

## General Survey Design

Several regulatory guidance documents (Michigan DHHS, HUD, EPA) prescribe procedures for conducting lead investigations of homes with LBP (the State of Michigan references the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (2012 Revision) (HUD Guidelines) as one of their four accepted sampling methodologies (MDCH 2007). The methodology and approach described herein is generally consistent with the intent of these guidance documents, but this protocol does not strictly adhere to or attempt to fulfill the requirements of any of these regulatory programs. Because XRF provides real-time, in-field measurements, the survey approach is intended to be relatively "flexible," i.e., decisions in the field (based on visual assessment and preliminary XRF readings of painted surfaces and exterior soils) will largely guide the investigation. Each of the selected residences will be evaluated, irrespective of the construction period of the individual residential unit. Generally, the proposed investigation will proceed as follows:

***Photo Log***

One or more photographs shall be taken with a GPS-enabled device or smartphone that show the house front door, and (where possible) house or unit number. Edit at least one photograph's metadata, or record at least one photograph's filename in an Excel spreadsheet, with columns that include the house or unit address.

***Visual Assessment***

A visual assessment will be conducted throughout each home to determine the size and instances of paint details such as: deteriorated paint, friction surfaces, chewed surfaces, deteriorated substrate conditions, and bare soil on the exterior. The visual assessment will also include the location and accessibility of the water service line within the home as well as noting any potable water fixtures that appear to contain brass.

***Interior Paint***

In each room, each wall and each painted surface will be initially scanned via XRF. Sample location will be at the direction of the investigator and pursuant to HUD guidelines 7-22 "XRF testing is required for at least one location per testing combination, except for interior and exterior walls, where four readings should be taken, one on each wall." "Certain building components that are adjacent to each other and not likely to have different painting histories can be grouped together into a single testing combination, as follows:

+ Window casings, stops, jambs and aprons are typically a single testing combination

+ Interior window mullions and window sashes are a single testing combination - do not group interior mullions and sashes with exterior mullions and sashes

+ Exterior window mullions and window sashes are a single testing combination
+ Door jambs, stops, transoms, casings and other door frame parts are a single testing combination
+ Door stiles, rails, panels, mullions and other door parts are a single testing combination
+ Baseboards and associated trim (such as quarter-round or other caps) are a single testing combination (do not group chair rails, crown molding or walls with baseboards)
+ Painted electrical sockets, switches or plates can be grouped with walls."

Each of these building parts should be "tested separately if there is some specific reason to believe that they have a different painting history. In most cases, separate testing will not be necessary." Per these regulatory guidance documents, targeted wooden surfaces should include:

- Window casings, stops, jambs and aprons
- Window mullions and window sashes
- Door jambs, stops, transoms, casings and other door frame parts
- Door stiles, rails, panels, and mullions
- Baseboards and associated trim (such as quarter-round or other caps)

***Exterior Paint***

One XRF scan of each painted wall and exterior surface (e.g., door, porch railings and window frames) will be taken, depending on ease of accessibility. Accessibility is at the discretion of the investigator, i.e., if the unit is not on the ground floor and the windows cannot be opened from within, then a particular surface may not be sampled. An additional XRF reading (two total) will be taken of each painted surface determined to contain LBP. Other painted structures (sheds, fences, etc.) may also be evaluated at the discretion of the study investigator.

***Water Service Line***

XRF scans of the water service line within the home will be taken, depending on ease of accessibility. Accessibility is at the discretion of the investigator. If there are multiple sections of the service line accessible, readings may be taken from each accessible section. The water service line location within the home will be photographed if accessible. Any reading over 0.25% for lead will be considered "lead-containing". According to the Reduction in Lead Water Act, the term 'lead free' means— "(A) not containing more than 0.2 percent lead when used with respect to solder and flux; and (B) not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures" (SWDA 2018).

If the service line cannot be accessed from the interior of the home, and if the study investigator determines that there is a high probability that the service line can be accessed from the exterior of the home through additional efforts such as temporary soil removal, the consultant will prepare a proposal outlining the costs, and methods and procedures to achieve access. No efforts will be made to penetrate through barriers such and sidewalks, etc. Before any action is taken to access the service lines from the exterior, a meet and confer will be scheduled with the parties to determine if it is necessary. If the parties cannot agree to the action to be taken, the issue will be addressed and decided by the Judge. An assessment will be made to ensure that there will be no permanent damage to the property. Lead service line data from the City of Flint may be consulted and factored into an assessment performed by the United States' sampling consultant.

***Other Fixtures***

At the discretion and professional judgment of the study investigator, any plumbing fixture may be scanned via XRF to determine lead content.

***Residential Soils***

Outdoor surface soil samples will be evaluated (via composite sample collection and laboratory analysis) within the property boundaries in targeted areas, that will include (1) near the foundation of the home at the "drip line" and (2) other areas where chipping or weathering of exterior paint might occur (near fences, sheds, etc.) and bare soil greater than 9 sq. ft., and any identified play areas including sandboxes.

At the direction of the study investigator, additional "non-targeted" soil locations will be evaluated (via composite sample collection and laboratory analysis) to provide a representative overall estimate of lead levels in the exterior soils. No attempts will be made to penetrate through concrete or other permanent barriers that might prevent access to surface soil.

Soil samples may also be collected at targeted areas beyond the residential property boundary if (1) any resident of the home (particularly children) may have spent a significant amount of time at that location and the surface soils are accessible, or (2) it has been determined previously that a lead source may have existed at that location. Sampling of non-residential source locations may occur during a separate survey if needed (due to time constraints on accessing the homes). Soils may be wet or frozen during the survey. The designated laboratory has drying procedures in place to properly dry the soil samples prior to analysis.

Pursuant to HUD guidelines 7-18: Exterior Painted Components That Should Be Tested Include but are not limited to:

Air Conditioners Fascias Railing Caps
Balustrades Floors Rake Boards
Bulkheads Gutters and Downspouts Sashes

Ceilings Joists Siding
Chimneys Handrails Soffits
Columns Lattice Work Stair Risers and Treads
Corner boards Mailboxes Stair Stringers
Doors and Trim Painted Roofing Window and Trim
Other Exterior Painted Components Include:
Fences Storage Sheds & Garages
Laundry Line Posts Swing sets and Other Play Equipment.

"Each composite sample should consist of subsamples that are of approximately equal bulk and that are collected from 3-10 distinct locations. Subsamples should be collected at least 2-6 feet away from each other if possible (small play areas may not be large enough for this spacing). For non-play areas in both the dripline/foundation area and the rest of the yard, subsamples should be taken from bare soil locations and should be dispersed in a pattern roughly similar to the distribution of the surfaces of bare-soil area throughout the dripline/foundation area and the rest of the yard."

Soil screening may be conducted by XRF but samples will be collected and sent to a National Lead Laboratory Accreditation Program (NLLAP) - certified laboratory for analysis. At the direction of the study investigator, additional "non-targeted" soil locations will be evaluated (via XRF) to provide a representative overall estimate of lead levels in the exterior soils. No attempts will be made to penetrate through concrete or other permanent barriers that might prevent access to surface soil.

***Interior house dust***

House dust will be collected at selected locations and will include visible dust in window wells, doormats, on upholstery, etc. House dust samples will be collected using 1) HUD and EPA-approved wipe sample techniques in residential dwellings; and 2) vacuum sample techniques (EPA, 2008) in locations at the discretion of the study investigator. Photos of both wipe and vacuum dust sample locations will be collected. House dust from floors and carpeted surfaces will be vacuumed using a procedure consistent with the guidelines of the USEPA, 2008 publication for use in the IEUBK Model. Sampling areas will be determined while at the residence.

Interior Walls will not require sampling using XRF or “wipe” sampling as the results of the sampling do not integrate into the IEUBK inputs.

**Soil Sampling Methodology**

Soil samples will be collected from the top 5/8 inch of bare soil areas measuring > 9 SF, building driplines, child play areas, gardens, sandbox, etc. Samples will be collected in accordance with Appendix 13.3 of the HUD Guidelines, or ASTM Standard Practice E 1727, “Standard Practice

for Field Collection of Soil Samples for Lead Determination by Atomic Spectrometry Techniques," or the EPA report, "Residential Sampling for Lead: Protocols for Dust and Soil Sampling," March 1995 (EPA 747-R-95-001).

**Interior House Dust**

House dusts may contain elevated lead levels if (1) LBP exists on the interior or exterior of the home or other outdoor structures (fences, sheds, etc.), or (2) there are elevated lead levels in the exterior soils (soils within or adjacent to the property boundary). If either of these conditions exists (as initially determined by XRF), house dust samples may be collected and analyzed by a certified laboratory. (Only EPA recognized NLLAP laboratories will be utilized to analyze dust wipes.) House dusts will be collected at the discretion of the study investigator, upon prior review of the XRF analyses of the interior or exterior surfaces and the exterior soils. Targeted locations will include visible dust in window wells, doormats, on upholstery, etc. House dust samples will be collected using wipe sample and/or vacuum techniques, at the discretion of the study investigator. Photos of dust sample locations will be taken.

*Porch dust*

Porch dust samples will be collected on all porches serving the home. Porch dust samples will be collected using HUD and EPA-approved dust wipe sample collection techniques. Photos of dust wipe sample locations will be collected.

**Dust Wipe Sampling Methodology**

Dust wipe samples will be collected from a total of six rooms within the home, with additional dust wipe samples collected from the floors at the entrances to the home. One dust wipe sample take from the floor, and one dust wipe sample taken from a window sill or window trough/well will be collected in each of the six rooms, alternating the collection of dust wipe samples from window sills and troughs from room to room, when possible. Sample locations will be selected by the risk assessor, paying particular attention to areas such as play areas within the room, high-traffic areas, and areas adjacent to or below friction and/or impact surfaces, or areas exhibiting deteriorated paint. Dust samples should be collected from operable windows, when possible, as well as windows most frequently contacted by children.

**Quality Assurance /Quality Control**

***X-Ray Fluorescence (XRF) Sampling***

Only XRF instruments that have a HUD/EPA-issued Performance Characteristic Sheet will be used in this survey. XRFs will be used in accordance with the manufacturer's instructions and the XRF Performance Characteristic Sheet.

Only licensed lead inspectors/risk assessors will operate the XRF instruments during an inspection. Only XRF's with a posted XRF Performance Characteristic Sheet (PCS) will be used when

performing lead-based paint inspections. At least three (3) calibration shots will be taken at the beginning of an inspection, with an additional three (3) calibrations readings taken approximately every four hours, and at the end of the inspection or end of the work day.

Initial XRF readings between 0.7 mg/cm2 and 1.2mg/cm2 (inconclusive range for the Viken Detection XRF, Model #: Pb200i testing instrument) will be followed by at least 3 additional readings to assist in verifying, or negating the negative result. If these additional readings also fall within the inconclusive range of the testing instrument, a paint chip sample will be collected, if possible, and sent for analysis at an EPA recognized National Lead Laboratory Accreditation Program (NLLAP) laboratory. Paint chips samples will also be collected, where possible, from surfaces with deteriorated surface coatings that are not able to be tested with the XRF. If the reading falls within the inconclusive range, and a paint chip sample cannot be collected, the result will be reported as positive. Paint chip samples will only be collected from components with deteriorated surface coatings. Intact surface coatings will not be damaged to collect paint chips, as this could produce a lead hazard where one did not previously exist.

***Dust Wipe Sampling***

All dust wipe sampling will be conducted following the Method of Sample Collection outlined in Chapter 5 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (2012 Edition). For quality assurance, one blank dust wipe will be collected at the beginning of the assessment, with additional blanks collected at a frequency of one blank per 20 samples collected. According to the HUD Guidelines, spikes are not required because the selected EPA recognized laboratory must participate in a proficiency program that includes analysis of single towelette spiked wipes.

***Written LIRA Report***

Results will be interpreted, and reports will be written by, an EPA certified lead inspector/risk assessor. Applicable HUD, EPA, and state standards and guidelines will be followed. Reports will be reviewed by an EPA certified lead inspector/risk assessor prior to report submittal.

References:

EPA, 1998. Short Sheet: IEUBK Model Mass Fraction of Soil in Indoor Dust (MSD) Variable https://www.epa.gov/superfund/lead-superfund-sitesguidance#indoordust

EPA, 2001. 40 CFR Part 745 Lead; Identification of Dangerous Levels of Lead; Final Rule. Available on the internet https://www.govinfo.gov/content/pkg/FR-2001-01-05/pdf/01-84.pdf. Jan 2001

EPA, 2007. User's Guide for the Integrated Exposure Uptake Biokinetic Model for Lead in Children (IEUBK) https://nepis.epa.gov/Exe/tiff2png.cgi/P1002RKA.PNG?-r+75+-g+7+D%3A%5CZYFILES%5CINDEX%20DATA%5C06THRU10%5CTIFF%5C00000304

%5CP1002RKA.TIF EPA, 2007M. METHOD 6200. FIELD PORTABLE X-RAY FLUORESCENCE SPECTROMETRY FOR THE DETERMINATION OF ELEMENTAL CONCENTRATIONS IN SOIL AND SEDIMENT. Available on the internet at https://www.epa.gov/sites/production/files/2015-12/documents/6200.pdf. Feb 2007.

EPA, 2008. OSWER Directive 9285.7-81 "Guidance for the Sampling and Analysis of Lead in Indoor Residential Dust for use in the Integrated Exposure Uptake Biokinetic (IEUBK) Model" (December 2008) https://www.epa.gov/superfund/lead-superfund-sites-guidance#ieubk

EPA, 2018. Protecting Children from Lead Exposure. EPA PUBLICATION #171K18001 https://www.epa.gov/sites/production/files/201810/documents/leadpreventionbooklet2018-v11_web.pdf

HUD, 2012. U.S. Department of Housing and Urban Development. Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing Office of Healthy Homes and Lead Hazard Control Second Edition. Available on the Internet at https://www.hud.gov/sites/documents/SECOND_EDITION_2012.PDF. July 2012

MDCH, 2007. Michigan Department of Community Health. LEADHAZARDCONTROL. Available on the internet at https://www.michigan.gov/documents/lead/Lead_Hazard_Control_Rules_625582_7.pdf. Sept 2007. SWDA, 2018. SAFE DRINKING WATERACT (TITLE XIV OF PUBLIC HEALTH SERVICE ACT). Section 1417. Amended and Enacted Oct 2018.

SO ORDERED.

Date: March 4, 2025

s/Judith E. Levy
JUDITH E. LEVY
United States District Judge

Dated: March 3, 2025

Respectfully submitted,

*s/ Melanie Daly*
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